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DOCKET
03-AFC-2
DATE JUL 29 2005
RECD. JUL 29 2005

**BEFORE THE**
**STATE OF CALIFORNIA**
**ENERGY RESOURCES CONSERVATION**
**AND DEVELOPMENT COMMISSION**

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|---|---|
| LOS ESTEROS<br>CRITICAL ENERGY FACILITY<br>PHASE 2 | Docket No. 03-AFC-2<br><br>CARE's Opening Brief |

## Introduction

Pursuant to the Committees order issued at the June 30, 2005 evidentiary hearing CARE herby submits its Opening Brief on Phase 2 of the Los Esteros Critical Energy Facility.

## Air Quality

### 1) BACT for CO is 4ppm for the Sprint LM-6000 Turbine as listed in the BAAQMD BACT Guidelines and the Commission Decision on the PICO Power Plant (02-AFC-03)

CARE was unable to effectively cross examine the BAAQMD representative due to the late release of the FDOC and the lack of time to review the document. CARE's request for rehearing to address this issue Docket #35036 remains unanswered and CARE reiterates its request to cross examine the BAAQMD on its testimony.

On page 18 of the FDOC for the Los Esteros Project the BAAQMD District states that Valero Cogeneration Unit has met its 2ppm NOx limit and also complied with the 4ppm CO limit when fired on natural gas. "**When the unit was fired on natural gas (141 hours excluding startups or transient load conditions) the Nox emission concentration did not exceed 1.9ppmv. In addition the CO emissions from the Valero unit exceeded 4 ppmv only 7 times out of 4,009 hours."** This is consistent with the published BAAQMD BACT Guidelines which provide that the Valero Cogeneration Project utilizing Sprint LM-6000 turbines has achieved in practice a 2ppm NOx, 4ppm CO and 2ppm POC limit. We ask the committee to take judicial notice of this publicly available document on the BAAQMD website.
http://www.baaqmd.gov/pmt/bactworkbook/89-1-6.htm

The BAAQMD guidance document presented below illustrates in footnote i (highlighted in red) that the Valero cogeneration Plant has achieved in practice a 4ppm CO limit while maintaining a 2ppm Nox limit. This is the current BACT level (achieved in practice) for the Sprint LM-6000 turbine.

***BAY AREA AIR QUALITY MANAGEMENT DISTRICT***
***Best Available Control Technology (BACT) Guideline***

***Source Category***

| | | | |
|---|---|---|---|
| Source: | ***Gas Turbine*** | Revision: | ***2*** |
| | | Document #: | ***89.1.6*** |
| Class: | ***Combined Cycle (≥ 40 Megawatts)*** | Date: | ***07/18/03*** |

***Determination***

| POLLUTANT | BACT<br>1. Technologically Feasible/ Cost Effective<br>2. Achieved in Practice | TYPICAL TECHNOLOGY |
|---|---|---|
| POC | 1. *n/d*<br>2. *2.0 ppm, Dry @ 15%$O_2$* [a,b,e,f,i] | 1. *n/d*<br>2. *Oxidation Catalyst, or Efficient Dry Low-NOx Combustors* [a,b,e,f,i] |
| NOx | 1. *2.0 ppm, Dry @ 15% $O_2$* [d,e,i,j,k,l]<br>2. *2.5 ppm, Dry @ 15% $O_2$* [a,b,e,g,i] *(2.0 ppm achieved in practice for 50 MW LM6000 combined cycle unit.*[i]*)* | 1. *SCR+ Low NOx Combustors, or Water or Steam Injection, or a SCONOX System* [d,e,i,j,k,l]<br>2. *SCR+ Dry Low-NOx Combustors* [a,b,e,g,i] |
| $SO_2$ | 1. *n/d*<br>2. *Natural Gas Fuel (sulfur content not to exceed 1.0 grain/100 scf)* [e] | 1. *n/d*<br>2. *Exclusive use of PUC-regulated grade natural gas* [e] |
| CO | 1. *n/d*<br>2. *4.0 ppm, Dry @15% $O_2$* [g,i] | 1. *n/d*<br>2. *Oxidation Catalyst* [g,i] |
| $PM_{10}$ | 1. *n/d*<br>2. *Natural Gas Fuel (sulfur content not to exceed 1.0 grain/100 scf)* [a,b,c,e,h,j,k,l] | 1. *n/d*<br>2. *Exclusive use of PUC-regulated grade natural gas* [a,b,c,e,h,j,k,l] |
| NPOC | 1. *n/a* | 1. *n/a* |

| | | |
|---|---|---|
| | 2. *n/a* | 2. *n/a* |

***References***

*a. Application #18595, Los Medanos Energy Center (formerly Pittsburg District Energy Facility)*
*b. Application #19414, Delta Energy Center.*
*c. Application #27215, Metcalf Energy Center*
*d. EPA LAER Determination letter dated 3/24/2000.*
*e. CARB "Guidance for Power Plant Siting and Best Available Control Technology", Stationary Source Division, June 1999*
*f. Application #8658, Crockett Cogeneration*
*g. Sacramento Power Authority (Campbell Soup) in Sacramento County, California. The unit is a 103 MW nominal output Siemens V84 combustion turbine with DLN combustion, SCR, and oxidation catalyst.*
*h. Application #1000, Contra Costa Power Plant Unit 8 Project*
*i. Application #2488 & 2695 Valero Cogeneration Project (Achieved in practice for LM6000 2.0 ppm NOx, 4.0 ppm CO, 2.0 ppm POC)*
*j. Application #2589, East Altamont Energy Center*
*k. Application #3506, Tesla Power Project*
*l. Application #6481, Pico Power Project*

**2) A 4ppm CO limit is technologically feasible and has been achieved in practice.**

The last siting case the PICO Power Plant (02-AF-03) where the Commission certified an LM-6000 turbine in combined cycle the BACT was 2ppm

NOx and 4ppm CO. In the FDOC for the PICO Power Plant (02-AFC-3 docket # 29406) the document that was accepted as evidence of regulatory compliance (LORS) for the PICO Power Plant the BAAQMD opined " "**The Pico applicant has agreed to a CO emission limit of 4.0 ppmvd @ 15% $O_2$, averaged over any rolling 3-hour period. This satisfies the current BACT 2 limitation as discussed above. Indeed, 4.0 ppmvd could be viewed as BACT 1, technologically feasible/cost-effective, for the LM 6000 size and class of turbine**." The PICO Power Plant FDOC also states **"The recently commissioned Valero 51 MW combined cycle plant, with a design configuration similar to the proposed Pico Plant, has a CO permit limit of 6.0 ppmvd when firing natural gas or natural gas/refinery fuel gas. However, recent performance data support the technological feasibility and cost-effectiveness of a 4.0 ppmvd CO limit."** We ask for the committee to take judicial notice of the PICO decision. The PICO Decision is an established precedent to require this project to adopt a 4ppm CO limit. The CEC staff in its comments on the PDOC recommended a 4ppm CO limit (Docket # 34110). The EPA recommended a 4ppm CO limit in its comments on the PDOC (Docket # 33042) based on the Las Vegas cogeneration project which EPA still insists is BACT for this project per my conversation with Shaherrra Kelly of the EPA on June 29, 2005. The original decision for the LECEF required the adoption of BACT for this project when it converted to combined cycle. All the regulatory agencies including the BAAQMD BACT guidelines recommend a 4ppm CO limit for this project. The applicant in its comment letters to the BAAQMD (Docket # 33033, 33225) has warned the BAAQMD that they have no legal justification to impose the 4ppm CO limit and this has influenced the District to relax established BACT determinations that have existed for several years to avoid litigation. The Commission should require the implementation of Best Available control Technology for the LECEF as the binding agreement with the applicant that was executed in the original decision requires.

**3. CO Emissions react to form CO2 a Greenhouse Gas and should be limited to the maximum extent feasible to prevent global warming.**

Staff's witness testified to the reactive nature of CO emissions and their potential to form Greenhouse gas. (RT 6-30-05 p. 104) The Commission should require the applicant to adopt the 4ppm CO limit which has been determined in previous cases to be technologically feasible and cost effective. Greenhouse gases have been determined to be a serious threat to California. Admittedly the project will not trigger a violation of the regulatory agencies health based CO air quality standards. This should not be used as an excuse to allow additional greenhouse gas emissions to be emitted when all the regulatory agencies agree including the BAAQMD BACT guidelines that a 4ppm CO limit is technologically feasible and cost effective and according to the PICO FDOC (02-AFC-3 docket # 29406) achieved in practice.

**Ammonia Emissions**

**4) Ammonia emissions are a precursor to PM 2.5 and are the major component of nitrogen deposition a significant impact to endangered species and should be limited to 5ppm.**

There is ample scientific evidence that Ammonia emissions convert to secondary PM 2.5 this is not in dispute (RT 6-30-05 p. 76). The air quality experts are divided on how much secondary PM 2.5 will be formed by the ammonia emissions from the LECEF. What is not in dispute is that the ammonia emissions from the LECEF are the largest contributor to nitrogen deposition (RT 10-30-05 p. 19) from the project, an impact that the Fish and Wildlife Service and the Commission Staff have determined to be a significant impact. Exhibit 2 page 10 lists the nitrogen deposition form ammonia emissions as 91 tons per year out of the projects estimated nitrogen deposition of 127 tons per year from both NOx

and Ammonia Emissions. The ammonia emission account for over 75% of the projects impacts to sensitive species.

**5) Limiting ammonia emissions would reduce the significant impact form the nitrogen deposition.**

As testified by staff's witness (RT 6-30-05 p. 138) limiting the ammonia emissions would be the best possible mitigation for the impacts from the projects nitrogen deposition. Limiting the projects ammonia emissions to 5ppm could reduce the projects nitrogen deposition impacts by 40%

**6) The applicant has provided no credible evidence that a 5ppm ammonia emission limit is not technologically feasible.**

The applicant has stated that the source tests conducted in December to reduce NOx did not monitor the ammonia emissions to establish whether reduced ammonia emissions are feasible with the 2ppm Nox limit.

> 11 Had we known at that time that the
> 12 Commission might impose a 5 ppm slip level, even
> 13 if the Air District did not, we would have run the
> 14 experiment and measured ammonia at the same time.
> 15 That may have, in fact, led us to the conclusion
> 16 that meeting all of these limits, meeting in
> 17 particular the 2 ppm NOx limit and the 5 ppm slip
> 18 level, was not technically feasible for these 19 units,
> (RT 10-30-05 p. 120)

The applicant has supplied no evidence that the 5ppm ammonia slip is not feasible. Staffs witness has testified the 5ppm ammonia slip is feasible and the current ammonia slip form Phase 1 of the LECEF is less than 1ppm. (RT 10-30-

05 p. 79) Table DR15-2 (Exhibit 2 page 9) confirms that the LECEF has an ammonia slip average that is well below the 5ppm limit. There is no credible evidence in the evidentiary record other than the unsubstantiated word of the applicants hired consultant that a 5ppm ammonia slip limit is not feasible. The Commission should impose a 5ppm ammonia slip limit.

**Nitrogen Deposition**

CARE does not agree that the applicants proposed NOx ERC's will mitigate the nitrogen deposition in the project area. NOx ERC's from the Potrero Power Plant created in 1985 cannot possibly mitigate nitrogen deposition from the LECEF in 2006. While 1985 ERC's from San Francisco could be used for regulatory compliance purposes to offset NOx emissions in the BAAQMD there use as CEQA mitigation for this project is ludicrous. It doesn't take an air quality expert to look at this mitigation to determine it is ineffective. The City of San Jose believes that the mitigation is inadequate and intends to impose conditions for their land use permit which will require additional mitigation. (Docket # 34887, RT 6-30-05 p. 37) The Commission as the CEQA lead agency is required to mitigate significant impacts from this project and should not be leaving it to the responsible agency to mitigate this significant impact.

**Land Use**

CARE is concerned that the applicant's estimate of $23,000 is inadequate to repair the path to usable condition. CARE's Expert witness Greg Beattie (Exhibit 34) has testified that the cost to repair the path would be $50,000. The only qualified expert testimony in the record on the bike path repair estimate is MR. Beattie's testimony. CARE is also concerned about the timing of the repair. The path has been damaged for three years it is certainly time to provide a concrete time frame for the repair. To alleviate these concerns CARE proposes the following modifications to Staff's Land 1 condition.

**Land 1 To help maintain public access and recreation adjacent to the project site the project owner shall fund an endowment through a one time payment to the city of San Jose for $50.000 for repair of the paved bikeway immediately to the north and parallel to Highway 237 between Zanker Road and Coyote Creek ("Bikeway"). To establish the endowment and its terms for repairing the bikeway, the project owner shall enter into a fund transfer agreement with the city of San Jose. Any portion of the $50,000 that is not used for the bikeway repair shall be refunded to the applicant. The bikeway must be repaired before the project owner is granted its Phase 2 license to convert to combined cycle.**

**Conclusion**

The BAAQMD and the CEC have previously ruled that a 2ppm NOx limit and a 4ppm CO limit are technologically feasible and cost effective for the LM-6000 in the PICO Power Plant case. There is nothing presented in the record which would warrant loosening these emission limits. The applicant's lone source test in December of 2004 utilized a high temperature catalyst and this single experiment hardly justifies a lowering of emission limits for this project. The projects ammonia emissions are the largest source of nitrogen deposition from this project an impact that has been deemed a significant impact. Limiting ammonia slip to 5ppm is a reasonable and feasible approach to limiting nitrogen deposition. Staff's bicycle path repair condition should be modified to reflect the true cost of bicycle path repair as estimated by CARE's expert witness to be $50,000 dollars. It is embarrassing that the repair of the path has taken so long and that the Committee must again revisit this issue. CARE thanks the committee for their efforts in pressuring the applicant to repair the damage to the path. Without the Committees assistance CARE believes the bicycle path would never be repaired. Therefore the Applicant should not receive his license until

the path is repaired or the motivation to complete these repairs will no longer exist.

Respectfully submitted,

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Michael E. Boyd
President
CAlifornians for Renewable
Energy, Inc. (CARE)
5439 Soquel Drive
Soquel, CA 95073

**Verification**

I am an officer of the Intervening Corporation herein, and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except matters, which are therein stated on information and belief, and as to those matters I believe them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 29th day of July 2005, at Soquel, California.

Michael E. Boyd – President, CARE
CAlifornians for Renewable Energy, Inc. (CARE)
5439 Soquel Dr.
Soquel, CA 95073-2659
Tel: (408) 891-9677
Fax: (831) 465-8491

E-mail: michaelboyd@sbcglobal.net